TRENDS IN WASHINGTON EARNINGS, 1989-1999: A REPORT BASED ON THE CENSUS

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Earnings of College-Educated Males

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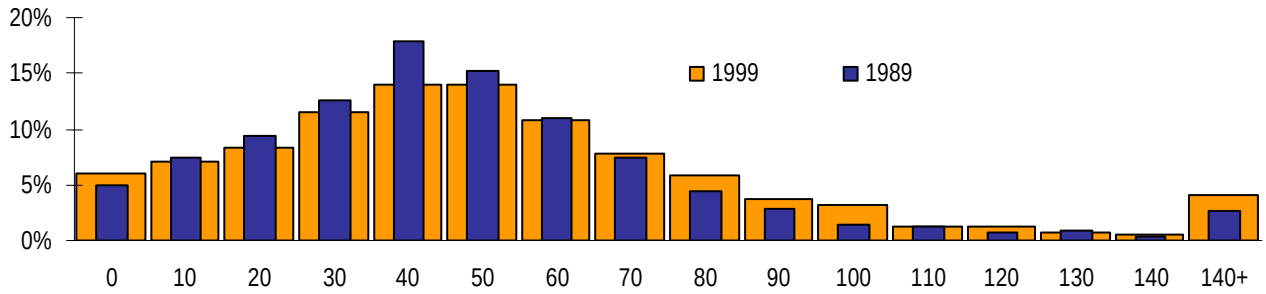
What happened to male college graduates in the 1990's? Did their earnings situation get better or worse between 1989 and 1999? Using data from the 1990 and 2000 five percent Public Use Microdata Sample (PUMS)[1], this issue brief will examine how earnings have changed for male college graduates[2] in Washington State and then evaluate how changes in the work level, age distribution, or full time earnings affected these changes.

Overall Earnings Increase for Most Male College Graduates

In general, earnings[3] increased for male college graduates (see Figure 1 and Table 1). Figure 1 shows that the distribution of adjusted earnings for male college graduates shifted slightly to the right from 1989 to 1999 (i.e. earnings increased). Mean earnings increased 21 percent or $9,357 dollars from $44,638 in 1989 to $53,995 in 1999 (see Table 1). At least part of the strong increase in mean male college graduate earnings was a result of stock options exercised by workers in the software industry.[4]

With the exception of earnings at the 10th percentile, where male college graduate earnings declined 13 percent or $903 dollars, earnings increased at all other percentiles examined. At the 25th percentile, earnings increased by five percent or $1,089. Male college graduates at the median experienced a 12 percent or a $4,648 increase in earnings from $38,352 in 1989 to $43,000 in 1999. Male college graduates at the 75th percentile earned $65,000 in 1999, up 16 percent from 1989. Male college graduates at the 90th percentile earned $95,000 in 1999, up 19 percent or $15,356 from 1989.

Figure 1—Distribution of Earnings for Male College Graduates



Note: Earning data was categorized in $10,000 increments with the exception of the first and last earning categories (i.e. the $10,000 earning category includes those earning $1-$10,000). The first earning category includes people with zero earnings and a small group of people with negative earnings. The last earning category includes those who earn $140,000 or more.

The Washington State data used in this analysis come from the 2000 five percent Public Use Microdata Sample (PUMS). More information on these surveys can be found at the Census website: http://www.census.gov/main/www/pums.html.

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Table 1—Earnings for Male College Graduates in Washington State Adjusted for Inflation (1999 dollars)

	1989	1999	Change 1999-1989	% Change (1999/1989-1)
Mean	$44,638	$53,995	$9,357	21%
Percentile				
10th	$6,903	$6,000	-$903	-13%
25th	$23,011	$24,100	$1,089	5%
50th	$38,352	$43,000	$4,648	12%
75th	$56,249	$65,000	$8,751	16%
90th	$79,644	$95,000	$15,356	19%

Has Work Level Changed among Male College Graduates?

The earnings distribution of male high school graduates is affected by work level.[5] Those who work more tend to earn more. In 1999, the real mean and median full time earnings for male college graduates were $64,047 and $50,000 respectively (see Figure 2). In contrast, the mean and median part time earnings for male high school graduates were $30,434 or $19,000 respectively. Those who have zero earnings and/or do not work, obviously have zero mean and median earnings.

All other things being equal, changes in the rate of full or part time work will change the earnings distribution. If the rate of full time work goes down or the rate of no work goes up then the overall earnings distribution will be lower than it would have been otherwise.

Between 1989 and 1999, the percentage of male college graduates who worked full time increased a little, the percentage of part time workers declined, and the percentage of non-workers increased (see Table 2). In 1999 three quarters of men with college degrees worked full time, 19 percent worked part time, and the remaining six percent did not work. If work level remained at 1989 levels, the mean earnings for male college graduates in 1999 would have increased by roughly $164.

Figure 2—Mean and Median Earnings for Male College Graduates by Work Level, 1999

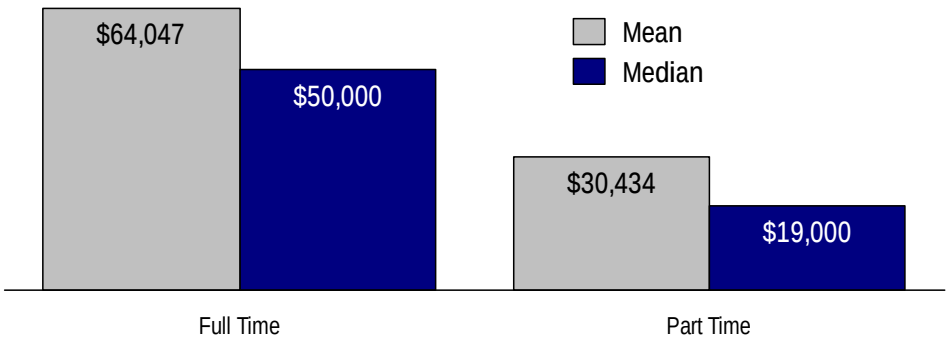

Table 2—Work Level for Male College Graduates in Washington State

	1989	1999	Change 1999-1989
No Work: zero earnings	4.5%	5.7%	1.2%
Part Time: non-zero earnings and hours < 35 or weeks < 45	20.8%	19.0%	-1.8%
Full Time: non-zero earnings and hours ≥ 35 and weeks ≥ 45	74.7%	75.3%	0.6%

Does an Older Population of Male College Graduates Translate into Higher Earnings?

Earnings tend to increase with age. In 1999, the mean earnings for male college graduates ranged from $19,037 among those aged 18 to 24 to $62,430 among those aged 45 to 54 (see Figure 3). Differences in earnings by age can mostly be explained by the difference in the experience and seniority that older workers have compared to younger workers. However, differences in earnings by age can also be explained by differences in work level by age. The youngest men are the least likely to work full time and the most likely to work part time (see Figure 4). Given their work levels and relative inexperience, it is not surprising that the youngest men earn the least.

Mean earnings of male college graduates increase with age until ages 55 to 64 when earnings decline. The high rate of non-workers, coupled with the relatively high rate of part time workers, brought down the mean earnings of college educated men aged 55 to 64, but it is interesting to note that even with the low rate of full time workers the mean earnings were still higher than the mean earnings of college educated men aged 25 to 34.

Between 1990 and 2000, the age of male college graduates shifted upwards (see Table 3). There were proportionally fewer men aged 18 to 44 and proportionally more men aged 45 to 64. Given the relationship between earnings and age, one would expect that an older population would result in higher overall earnings. Indeed, if the age distribution in 2000 was the same as 1990 then mean earnings would have been roughly $956 less than actual. If both the age distribution and work level by age remained the same in 1999 as it was in 1989 then the mean earnings would have been roughly $949 dollars less than actual.

Figure 3—Mean Earnings for Male College Graduates by Age, 1999

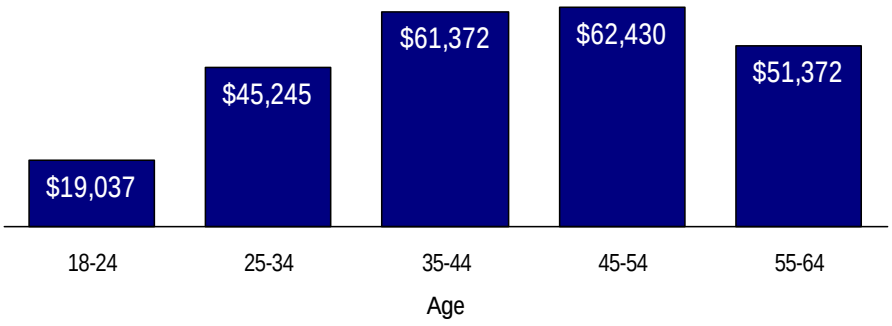

Figure 4—Work Level By Age For Male College Graduates, 1999

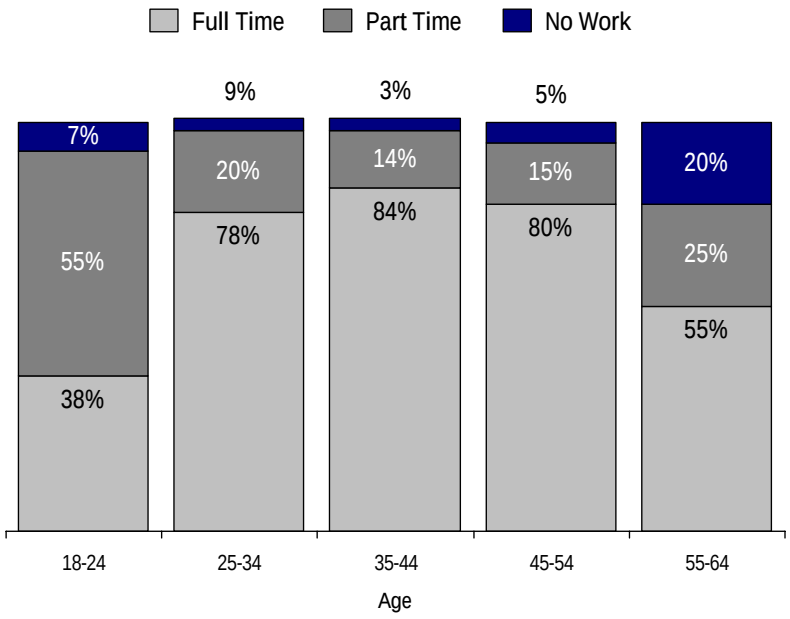

Table 3—Shift in Age Distribution Among Male College Graduates in Washington State

Age	1990	2000	Change 2000-1990
18-24	5%	5%	-1%
25-34	32%	27%	-4%
35-44	34%	29%	-5%
45-54	18%	26%	9%
55-64	12%	13%	1%

Did College Graduates Experience Any Increases in Earnings for Full Time Work?

As shown above, changes in the age distribution affected earnings in an upward direction more than offsetting the changes in work level. Another factor affecting earnings change is whether male college graduates have the same earnings for the same work level. Looking at full time earnings, male college graduates experienced increase in earnings across all percentiles examined. Male college graduates experienced larger increases in real dollars above the 10th percentile compared to all men (see Table 4). With the exception of men at the 10th and 90th percentiles, college educated men working full time experienced faster rates of increase in earnings compared to all men.

Conclusion

The earnings of male college graduates increased over the 10-year period between 1989 and 1999. The higher wages and/or salaries associated with older workers more than made up for the slight declines in the proportion of part time workers and the increase in the proportion of non-workers. In general, college educated men experienced greater increases in full-time earnings compared to men overall.

Table 4—Full Time Earnings of Male College Graduates and All Men Adjusted for Inflation (1999 dollars)

		1989	1999	Change 1999-1989	% Change (1999/1989-1)
Male High School Graduates					
Mean		$52,784	$64,047	$11,263	21%
Percentile					
	10th	$23,011	$24,000	$989	4%
	25th	$31,960	$35,000	$3,040	10%
	50th	$44,744	$50,000	$5,256	12%
	75th	$61,363	$72,000	$10,637	17%
	90th	$86,299	$100,000	$13,701	16%
All Men					
Mean		$43,225	$49,929	$6,704	16%
Percentile					
	10th	$15,724	$17,000	$1,276	8%
	25th	$25,418	$26,000	$582	2%
	50th	$37,946	$40,000	$2,054	5%
	75th	$51,136	$57,000	$5,864	11%
	90th	$70,311	$82,000	$11,689	17%

1 The PUMS is an individual level data set that contains decennial U.S. Census data collected from the long form of the U.S. Census. Earnings include wage, salary, commission, bonus, and tip income from all jobs before deductions and/or net income from self-employment. Earnings and work related data were collected for the year prior to when the Census was taken. For example, the 1990 PUMS contains answers to questions regarding what the respondent's earnings, hours worked, and weeks worked were for the prior year (1989). Population characteristics, such as age, were collected at the time of the Census. So the 2000 PUMS contains the ages of respondents in 2000.

2 College graduates are defined for these purposes as those who have completed a four-year degree. Those who have gone on to complete higher degrees are not included in this analysis.

3 The 2000 Census topcoded wage and salary earnings at $336,000 and self-employment earnings at $245,000. Total earnings are the sum of these two values. The 1990 Census total earnings adjusted for inflation were topcoded at $500,320 ($391,368 unadjusted).

4 In 1999 the software industry had roughly 27,300 workers making up less than one percent of Washington's workforce. That year the software industry reported 10.3 billion dollars in wages to employment security. If one assumes that the real wage of each of these workers was about $100,000 then about 7.6 billion of these reported wages were a result of stock options. The high earnings of these relatively few workers raised the mean earnings. The full effect of these top earners on mean earnings is minimized somewhat by the fact that the 1990 and 2000 Censuses topcoded total earnings (see Endnote 3 above).

5 Full-time work is defined as working 35 or more hours a week, 45 or more weeks a year, and having non-zero earnings. Part time work is defined by non-zero earnings, and working less than 35 hours a week or less than 45 weeks a year. No earnings is simply defined as having zero earnings.